

# SYSTEM AND METHOD FOR DETERMINING PROPAGATION CHARACTERISTICS OF PHOTONIC STRUCTURES

## ABSTRACT OF THE DISCLOSURE

Systems for, and method of, determining propagation characteristics of a photonic structure having a transverse N-fold symmetry. In one embodiment, a system includes: (1) a numerical analyzer that employs a leading order of a systematic homogenization expansion having multiple scales to develop an angularly averaged indexed profile for the photonic structure and (2) a leading order corrector, associated with the numerical analyzer, that further employs the homogenization expansion to refine an imaginary part of an effective index of refraction of the photonic structure.